

What is claimed is:

1. A clutch system for a washing machine having a spin tub within a static tub and a centrally located agitator system to affect a changeover between agitation mode and a spin mode, the clutch comprising:
 - 5 a housing that is rotatable in a first direction and a second direction;
an input shaft attached to the housing;
a spinner support operably mounted to the housing;
a first one-way clutch connecting the spinner support to the static tub permitting relative rotation between the spinner support and the housing in a first direction;
 - 10 whereby the housing when rotated in a first direction rotates the input shaft in the first direction and the first one-way clutch stops the spinner support from rotating to permit relative rotation between the spinner support and the housing and enable the agitation mode without the spin tub moving;
a second one-way clutch connecting the spinner support to the housing with an
 - 15 intermediate delay body having a first position and a second position; the second one-way clutch permitting relative rotation between the spinner support and the housing in the first direction and preventing relative rotation in a second direction;
whereby the housing when rotated in the second direction rotates the input shaft in the second direction, moves the delay body to permit relative rotation between the
 - 20 spinner support and the housing and enable backward movement of the centrally located agitator system without movement of the spin tub, and then prevents relative rotation between the spinner support and the housing when the delay body is in the second position to enable the spin mode without engagement of the centrally located agitator system.
- 25 2. The clutch system of claim 1 wherein the housing is a pulley assembly engageable by a belt turned by a motor.
3. The clutch system of claim 1 wherein the backward movement of the centrally
- 30 located agitator system rotates at least one lifter backwards between 30 – 50 degrees.

4. The clutch system of claim 1 wherein the backward movement of the centrally located agitator system rotates at least one lifter backwards approximately 40 degrees.

5. The clutch system of claim 1 wherein rotation of the input shaft in the first direction engages the centrally located agitator and exerts a reverse torque upon the spin tub which is attached to the spinner support.

6. The clutch system of claim 1 wherein the centrally located agitator is connected to the spin tub through bearing surfaces.

7. The clutch system of claim 1 where in the delay body is a spiral spring.

8. A method of using a clutch for a washing machine having a spin tub within a static tub and a centrally located agitator system to affect a changeover between agitation mode and a spin mode, the method comprising:

providing a housing having an input shaft attached and a spinner support operably mounted;

providing a first one-way clutch connecting the spinner support to the static tub permitting relative rotation between the spinner support and the housing in a first direction;

providing a second one-way clutch connecting the spinner support to the housing with an intermediate spiral spring, the second one-way clutch permitting relative rotation between the spinner support and the housing in the first direction and preventing relative rotation in a second direction;

rotating the housing in a first direction thereby rotating the input shaft in the first direction and the first one-way clutch stopping the spinner support from rotating and permitting relative rotation between the spinner support and the housing to enable the agitation mode without the spin tub moving;

rotating the housing in a second direction thereby rotating the input shaft in the second direction, the second one-way clutch stopping the spinner support from rotating but the spiral spring moving from a rest position to a taut position thereby permitting relative rotation between the spinner support and the housing and rotating the

centrally located agitator system backwards, and preventing relative rotation between the spinner support and the housing when the spiral spring is taut to enable the spin mode without engaging the centrally located agitator system.

5 9. The method of claim 8 further comprising rotating the housing using a belt turned by a motor.

10. The method of claim 8 wherein the centrally located agitator is rotated backwards between 30 – 50 degrees.

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11. The method of claim 8 wherein the centrally located agitator is rotated backwards approximately 40 degrees.

12. A clutch system for a washing machine having a spin tub within a static tub, a
15 centrally located agitator system, an input shaft, a spinner support, and a motor provided to drive the spin tub and agitator system, the clutch comprising:
a housing adapted to attach to an input shaft and a spinner support;
a delay body attached to the housing moveable between a rest position and a taut position;
a first one-way clutch adapted to connect the spinner support to the static tub permitting
20 relative rotation between the spinner support and the housing in a first direction;
a second one-way clutch attached to the delay body and adapted to connect the spinner support to the housing, the second one-way clutch permitting relative rotation between the spinner support and the housing in the first direction and preventing relative rotation in a second direction;
25 a cylindrical hub engaging the first one-way clutch, the second one-way clutch, and adapted to engage the spinner support.

13. The clutch system of claim 12 wherein housing is a pulley assembly.

14. The clutch system of claim 12 wherein the delay body movement results in at least one lifter of the centrally located agitator being rotated backwards between 30 – 50 degrees.

5 15. The clutch system of claim 12 wherein the delay body movement results in at least one lifter of the centrally located agitator being rotated backwards approximately 40 degrees.

16. The clutch system of claim 12 wherein the first one-way clutch is positioned
10 outside of the housing.

17. The clutch system of claim 12 wherein the first one-way clutch is positioned inside of the housing.

15 18. A clutch system for a washing machine having a spin tub within a static tub, a centrally located agitator system, and a motor provided to drive the spin tub and agitator system, the clutch comprising:
a housing;
an input shaft attached to the housing;
20 a spinner support operably engaging the housing;
a delay body within the housing having an outer end attached to the housing and an inner end, the delay body moveable between a rest position and a taut position;
a lower ring attached within the housing having an inner one-way clutch connecting the spinner support to the delay body inner end, the lower ring one-way clutch
25 permitting relative rotation between the spinner support and the housing in the first direction and preventing relative rotation in a second direction;
an outer one-way clutch operably connecting the spinner support to the static tub and permitting relative rotation between the spinner support and the housing in a first
direction.

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19. The clutch system of claim 18 wherein the delay body is a spiral spring.

20. The clutch system of claim 19 wherein the spiral spring movement results in at least one lifter of the centrally located agitator being rotated backwards between 30 – 50 degrees.

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21. The clutch system of claim 19 wherein the spiral spring movement results in at least one lifter of the centrally located agitator being rotated backwards approximately 40 degrees.

10 22. The clutch system of claim 18 wherein the outer one-way clutch is located in an upper ring.

23. The clutch system of claim 18 wherein the outer one-way clutch is located within the spinner support.